Outfall 002A – TCE Exceedance in October 2018 and Plan of Action

The TCE concentration in the sample from outfall 002A (groundwater infiltration) was 7.6 ppb this month, compared to a permit limit of 5 ppb.

We believe this exceedance was due to the following:

- Full capture of dry weather flow was not being achieved at the time of sample collection at a recovery flow rate of 43.3 gallons per minute (gpm).

The reasons for this conclusion are as follows:

1. The overflow switch installed at the top of the baffle was not engaged; however, it is possible that the extent of the overflow was not great enough at the time of sample collection to engage the alarm.
2. The estimated flow going over the baffle at the time of sample collection was approximately 3.9 gpm. This flow (Q) was calculated by using the following equation for calculating flow over a rectangular suppressed weir with fully contracted flow:

$$Q(gpm) = (3.33) * (L) * (H)^{1.5} * \frac{448.8325660485\ (gal/min)}{1\ (\frac{ft^3}{s})}$$

Where:
L = width of weir (constant) = 6 ft
H = height of water over the baffle (ft) calculated as:

$$H = h_1\ (\text{ftbgs}) - h_2(\text{ftbgs})$$

Where:
h_1 = height of the baffle (constant) = 3.962 ftbgs (feet below ground surface)
h_2 = height of water measured in CB-87R at the time of 002A sample collection = 3.956 ftbgs at 9:36 AM on 10/23/18

3. In addition, the catch basin (CB-88 – brick construction) that accepts discharge from the treatment plant as well as storm water from the area has collapsed on one side. Because of this problem, the gravity fed effluent discharge from the GWTP has been limited to between 80-90 gpm during the month of October. This has limited the amount of groundwater that can be extracted and treated without triggering a shutdown of the GWTP due to high levels in the effluent discharge tank. We believe this is contributing to greater dry weather flow than is typical at this time of year. It is also possible that infiltration of groundwater in the vicinity of CB-88 is occurring due to this collapse.

The following corrective action(s) are planned for the months of November and December:

1. Clean effluent discharge line to increase the effluent discharge capacity. This work was completed during the first week of November and resulted in an approximate 20-25% increase in effluent discharge capacity.
2. Lower set point of level transmitter in CB-87R that controls the vault recover pumps (P-04A/B) to maintain a standing water level in CB-87R that is at least a foot below baffle under normal operations. This will require cleaning of the grit chamber (scheduled for late –November/early-December) so that the lower set point will not cause entrainment of grit and associated filter fouling.
3. Optimization of the pre-filtration system to allow for sustained dry-weather flow capture up to 50 gpm. This is expected to eliminate untreated dry-weather flow over the baffle during non-storm conditions where dry-weather flow does not exceed 50 gpm.
4. Replacement of CB-88. This will eliminate any potential influx of groundwater in the vicinity of CB-88 and will allow for full design pump, treat and discharge up to 120 gpm. The property owner has agreed to having TI replace this structure, and also will cut down trees that are believed to have contributed to its failure. Weather permitting, this work is scheduled for completion in December (must be performed during dry weather conditions).